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13- 3 practice permutations and combinations answers

1) Resolve for the factories below: a) 4! b) 0! c) (3!) (2!) d) 10!/8! 2) Evaluate each: a) 9P9 b) 9C9 c) 9P5 d) 9C5 Be careful. I mixed into some problems that are not Permutation/Combination in the set below. 3) How many ways can you turn into an at-bat for a baseball team if you only have 9 players? 4) Suppose a lawyer must select 4 judges from a set of six candidates? How many groups are possible? 5) How many ways can 3 runners be selected for the Olympics from a field of 5 participants? 6) How many ways can the first 3 places be allocated in a race involving 5 participants (excluding tires)? 7) How many ways can the positions of president and vice president of a group of 8 people be awarded? 8) Find the number of hugs possible in a family of 5 people (no repeat hugs). 9) You have 9 families you would like to invite to a wedding. Unfortunately, you can only invite 6 families. How many different sets of invitations can you write? 10) Suppose we must select 5 drivers from a list of 10. How many ways can this be done? Returns the correct expression that gives the answer. 11) Suppose we should choose a manager, assistant manager and night manager from a list of 10 people. How many ways can this be done? Returns the correct expression that gives the answer. 12) How many ways can a 3-card hand be selected from a standard 52 card cover? Returns the correct expression that gives the answer. 13) Three cards are selected randomly and given to 3 players. How many possibilities exist? Returns the correct expression that gives the answer. 14) A card is selected from a standard deck of cards and then put back and the deck is shuffled. This is done 3 times. How many 3 card hands can you receive? 15) At a Fiat dealer, a total of 3 cars must be transported from a particular model to another dealer. If there are 25 cars of this type, how many choices are available for transportation? 16) At a Fiat dealer, a total of 3 cars must be transported from a particular model to another dealer. If there are 25 cars of this type, how many ways can they be loaded onto the truck for transportation? 17) At a Fiat dealership, there are 25 cars of a certain model. Fifteen have automatic transmission. Twelve have leather seats. Ten cars have both automatic transmission and leather seats. a) How many have either automatic transmission or leather seats. b) How much does automatic transmission or leather seats. 18) Social Security numbers consist of 9 digits (0-9). If there are no restrictions, how many different Social Security numbers are possible? 19) Suppose license plates in one state have 4 letters followed by 2 digits. a) How many license plates can be created if there are no other restrictions? b) What if only letters cannot be repeated? c) What if only numbers cannot be repeated? 20) A shipment of 20 disk drives was received by a computer store. Four of the drives are flawed. A sample of is randomly selected. a) How many different samples can be selected? b) How of the samples containing 2 defective drives? c) Suppose one of the samples is tested and one sample is sold. How many ways can this be done? 21) Suppose a 5-card hand is selected from a standard deck of cards. How many ways can the following be done? a) Select 3 Kings and 2 Aces b) Select exactly 3 fours. c) At least 4 hearts 22) Suppose we have an office of 5 women and 6 men and must choose a 4 person committee. How many ways can we choose a) 2 men and 2 women? b) 3 men and 1 woman? c) All women? 23) A lottery consists of 54 numbers. To purchase a ticket, you select 6 numbers of 54 without recurrence. How many choices are possible? (In lotteries, the order is generally not relevant.) Just for fun, what if you had to get the numbers selected in the order? 24) Out of 30 applicants, 11 are female, 17 are college graduates, 7 are bilingual, 3 are female graduates, 2 are bilingual women, 6 are bilingual graduates and 2 are bilingual female graduates. Find the number of female graduates who are not bilingual. 25) a) How many 3 letter code words can be selected if there are no restrictions? b) How many 3 letter code words can be selected if repetition is not allowed? 26) Seven coins are singling. 7 are bilingual, 3 are female graduates, 2 are bilingual women, 6 are bilingual graduates and 2 are bilingual female graduates. Find the number of female graduates who are not bilingual. 27) There are 7 women and 5 men in a class. The instructor must choose 5 to be on a committee. How many ways can the instructor choose, a) a group of 3 women and 2 men? b) a group of 2 women and 3 men? c) a group of all women? d) a group of all people? We know that: ${}_nP_r = \frac{n!}{(n-r)!}$ ${}_nP_6 = \frac{10!}{(10-6)!}$ $\frac{10!}{4!}$ We know this too: $Sx! = x(x-1)(x-2) \dots (1)$ So, we have: 151,200 You can help us by reviewing, improving and updating this answer. Update this answer After you demand an answer, you'll have 24 hours to send in a draft. An editor will review the submission and either publish your submission or provide feedback. Next Answer Chapter 13 - Probability - 13-3 Permutations and Combinations - Practice and Problem-Solving Exercises - Page 841:15 Previous Answer Chapter 13 - Probability - 13-3 Permutations and Combinations - Practice and Problem Solving Exercises - Page 841: 13 We start with the given expression: $\frac{15!}{(15-10)!}$ First we simplify inside of the parentheses in the denominator: $\frac{15!}{5!}$ To evaluate a factory expression, we multiply the number by each of the preceding integer until we get 15!. So, $\frac{15!}{5!} = \frac{15 \times 14 \times 13 \times 12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{5 \times 4 \times 3 \times 2 \times 1} = 215 \times 14 \times 13 \times 12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 = 10,897,286,400$ You can help us by reviewing, improving, and updating this response. Update this answer After you have demanded an answer, you will have 24 hours to create a 10.2.2.2. An editor will review the submission and either publish your submission or provide feedback. Next Answer Chapter 13 - Probability - 13-3 Permutations and and - Practice and Problem-Solving Exercises - Page 841:14 Previous Answer Chapter 13 - Probability - 13-3 Permutations and Combinations - Practice and Problem Solving Exercises - Page 841:12 In this section you can learn and practice Aptitude QUESTIONS based on Permutation and Combination and improve your skills in order to face the interview, competitive examination and various admission tests (CAT, GATE, GRE, MAT, Bank exam, Railway Examination etc.) with full confidence. Where can I get aptitude permutation and combination questions and answers with explanation? IndiaBIX provides you with very fully resolved aptitude (Permutation and Combination) questions and answers with explanation. Resolved examples with detailed answer description, explanation is given and it will be easy to understand. All students, freshers can download Aptitude permutation and combination quiz questions with answers as PDF files and eBooks. Where Can I Aptly Permutation and Combination Maintenance Questions and Answers (objective type, multiple choice)? Here you can find objective type of Aptitude Permutation and Combination Questions and Answers for Maintenance and Entrance Exam. Multiple choice and genuine or false type questions are also provided. How to solve aptitude permutation and combination problems? You can easily resolve all types of aptitude questions based on permutation and combination by practicing the objective type of exercises below, also getting shortcut methods to solve Plant Permutation and Combination Problems. Exercise :: Permutation and Combination - Frequently Asked Questions View Answer Discuss in Forum Workspace Report 2. In how many different ways can the letters of the word 'LEADING' be arranged in such a way that the vowels always come together? A. 360B. 480C. 720D. 5040E. None of this Answer: Option C Explanation: The word 'LEADING' has 7 different letters. When the vowels EAI are always together, they may be supposed to form one letter. Then we need to arrange the letters LNDG (EAI). Now, $5(4 + 1 = 5)$ letters can be arranged in $5! = 120$ ways. The vowels (EAI) can be arranged among themselves in $3! = 6$ ways. Required number of ways = $(120 \times 6) = 720$. Video Explanation: View Answer Discuss in Forum Workspace Report Page 2 Exercise :: Permutation and Combination - Frequently Asked Questions Answer Discuss in Forum Workspace Report 7. How many 3-digit numbers can be formed from the figures 2, 3, 5, 6, 7 and 9, which are divisible by 5 and none of the figures are repeated? Answer: Option D Explanation: Since each desired number is divisible by 5, we must have 5 at the unit location. So, there's 1 way to do it. The ten-place can now be filled by any of the remaining 5 digits (2, 3, 6, 7, 9). So there are 5 ways to fill the ten spot. The hundreds of place can now be filled by any of the remaining 4 figures. So there are 4 ways to fill it. Required number of numbers = $(1 \times 5 \times 4) = 20$. View reply without adage in Forum Page 3 Exercise :: Permutation and Combination - Frequently Asked Questions View Answer Discuss in Forum Workspace Report View Answer Discuss in Forum Workspace Report 13. In how many different ways can the letters of the word 'MATHEMATICS' be arranged so that the vowels always come together? A. 10080B. 4989600C. 120960D. None of this Answer: Option C Explanation: In the word 'MATHEMATICS', we treat the vowels AEAI as one letter. So, we have MTHMTCS (AEAI). Now we have to arrange 8 letters, from which M occurs twice, T occurs twice and the rest is different. Number of ways to arrange these letters = $8! = 10080$. (2!) (2) AEAI now has 4 letters in which A occurs 2 times and the rest is different. Number of ways to arrange these letters = $4! = 12$. 2! Required number of words = $(10080 \times 12) = 120960$. 120960.